Evaluating Proprietary BMPs: Is it Time for a State, Regional or National Program?

A Summary Report of the STAC-Funded Workshop
Held on March 24, 2015, Fairfax, VA.

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Presentation to the Chesapeake Bay Program
Science and Technical Advisory Committee
Annapolis, MD
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Outline

- Background on MTDs
- Summary of workshop findings
- Workshop recommendations
- Next steps

Proprietary Practices

- Proprietary BMPs
- MTDs
- Implement new treatment technologies
- Achieve great efficiency
- Often a smaller footprint

Stormwater Treatment Technologies

Category	Flow		Unit Processes									
			Physical				Chemical			Biological		
Unit Operations	**Peak Flows**	**Reduce V**	**Sedimentation**	**Flotation**	**Flocculation**	**Filtration**	**Sorption**	**Precipitation**	**Destabilization**	**Phytoremediation**	**Transformation**	**Sorption**
Dry Basins	●		●									
Wet vaults	●		●	●								
Wet ponds	●		●	●			●	●		●		●
Constructed wetlands			●	●			●	●		●	●	
Oil/water separators			●	●								
Vortex separators			●	●								
Precipitation			●				●	●				
Coagulation			●		●		●	●	●			
Inert media filters			●			●	●	●			●	

Sources: Minton, G.R. (2005) Stormwater Treatment: Biological, Chemical, and Engineering Principles. Center for Watershed Protection (2008), The Runoff Reduction Method. Sample, D. J., Grizzard, T. J., Sansalone, J., Davis, A. P., Roseen, R. M., and Walker, J. (2012). "Assessing performance of manufactured treatment devices for the removal of phosphorus from urban stormwater." J. Environ. Manage., 113(0), 279-291.

Stormwater Treatment Technologies, cont'd

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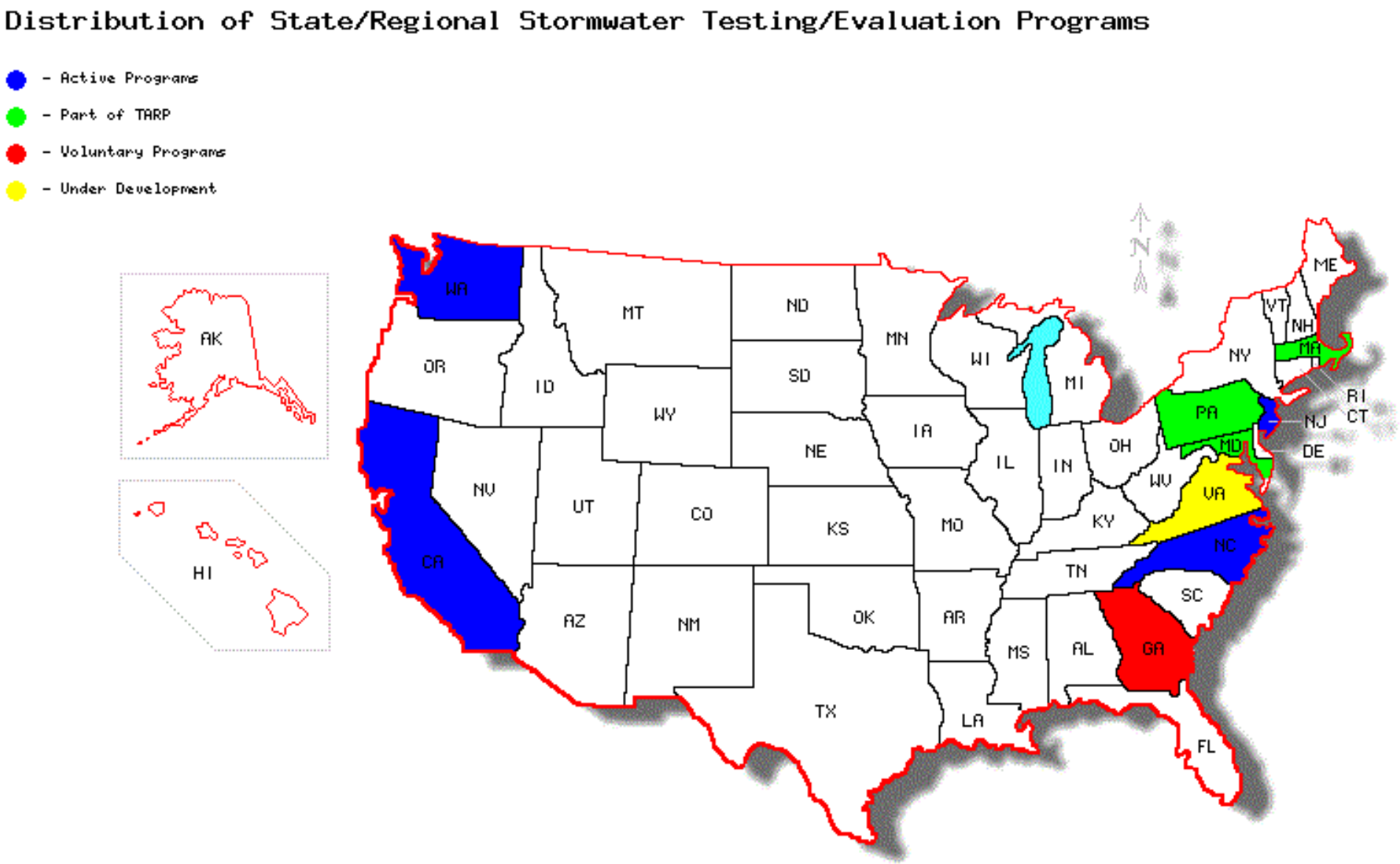
Sorptive media filters			●			●	●			●		
Grass Channel		●	●			●	●			●		
Wet swales			●				●			●		
Vegetated swales and strips (dry)		●	●			●	●			●		
Infiltration basins and trenches, porous pavements		●	●			●	●			●		
Bioretention	●	●	●			●	●			●		●
Vegetated roofs		●				●	●			●		●
Rainwater harvesting	●	●										

Sources: Minton, G.R. (2005) Stormwater Treatment: Biological, Chemical, and Engineering Principles. Center for Watershed Protection (2008), The Runoff Reduction Method. Sample, D. J., Grizzard, T. J., Sansalone, J., Davis, A. P., Roseen, R. M., and Walker, J. (2012). "Assessing performance of manufactured treatment devices for the removal of phosphorus from urban stormwater." J. Environ. Manage., 113(0), 279-291.

MTD Assessment Programs



Source: Brown, S., 2015, Exploring the Need for a National Stormwater BMP Testing and Verification Program, Presentation at the March 24, 2015 STAC Workshop, Evaluating Proprietary BMPs: Is it Time for a State, Regional or National Program?, Fairfax, VA.

Workshop Finding #1

What is the problem? Why do we need MTDs?

Finding:

- Urban runoff and treatment effectiveness are highly variable.
- New treatment technologies are needed to meet the Bay TMDL.
- MTDs could provide new and potentially innovative cost-effective technologies not found with current suite of BMPs.

Workshop Finding #2

2. Why do we need an evaluation/testing program for MTDs?

Finding:

- A standard method for MTD evaluation is needed to provide confidence in treatment performance.
- No credit is currently given to MTDs in the Chesapeake Bay Model unless they are fully equivalent to an approved nonproprietary BMP.

Workshop Finding #3

What is the current process for evaluating non proprietary BMPs in the Bay watershed? How do these get incorporated into the Bay Model CBWM)?

Finding:

- Current process for approving nonproprietary BMPs is through an expert panel process.
- Workshop participants agreed that, without expediting or streamlining, it will hinder development of new technologies within MTDs.

Workshop Finding #4

What is the state of the science on evaluating stormwater treatment performance?

Finding:

- Variability of runoff quality is directly related to the length of the monitoring program. Average length is currently 1-2 years.
- Differences in monitoring programs across states could lead to barriers in adoption.
- A consistent MTD evaluation program across the Bay is needed.

Workshop Finding #5

What are some of the existing (and proposed, or formerly proposed) MTD evaluation programs?

Finding:

- Programs compared included TAPE, NJDEP and/or TARP (now defunct) and VTAP (now defunct).
- Cost of compliance is significant, however, it is essential to “level the playing field”, and should be balanced against the cost of not taking action.
- An evolving effort to develop a national program (STEPP) led by WEF was described.

Workshop Finding #6

What would a Bay MTD evaluation program look like?

Finding:

- Program should be rigorous, consistent and defensible, and managed transparently.
- New MTDs have a path to implementation, with an evaluation that is rapid, yet safe, providing results that can be used in the Bay model.
- Process should be funded mainly by vendors.
- VTAP could be used as a starting point.

Recommendations

- A Bay-wide program, the Chesapeake Bay Technology Assessment Protocol (CBTAP) should be adopted, with a version of existing protocols such as VTAP as a starting point, to be decided by an advisory expert panel.

Expert Panel for CBTAP

- Panel to commence in fall, 2016, complete by fall, 2017.
- Members of the panel shall include:
  - Manufacturers,
  - Regulators (MS4 programs and state officials)
  - Academics, consultants, CSN.
- Charge of the panel is to:
  - Select a protocol,
  - Provide guidance for implementation,
  - Provide guidance for administering the program,
  - Assess financial requirements.

Recommendations

- Output from the panel (including both administration and financial requirements) to be submitted to the Executive Council.
- The Panel and the ultimate CBTAP program will be administered through the USWG.
- Approval of recommended water quality performance credits through CBTAP will be integrated into the CBWM as soon as practical.
- Should an acceptable national program emerge, it would be beneficial for CBTAP to coordinate its operations with that program.

Next Steps

- Invitation to Participate

Agreed		Declined
Stewart Comstock, MDE	Ginny Snead, Louis Berger	Chris French, WEF
Robert Cooper, VADEQ	Ted Brown, Biohabitats	Robert Traver, Villanova
Sebastian Donner, WVDEP	Joe Battiata, City of Hopewell	
Elaine Webb, DNREC	Steven Stewart, Baltimore County	
Ken Murin, PADEP	Brian Rahal, City of Alexandria	
Jim Lenhart, Contech	Chris Swanson, VDOT	
Scott Perry, Imbrium	Tom Schueler, CSN	
Bill Lucas, ILM	Andy Dinsmore, EPA	
Bruce Jones, RKK		
Shirley Clark, PSU		
David Sample, VT		
Carmine Balascio, UDEL		

Next Steps

- Submitted funding request for 2016 Goal Implementation Team Projects
  - Selected for funding
  - Scope of Work under development
  - RFP release October 2016